Amendments to the Claims

The listing of the claims will replace all prior versions, and listings, of claims on this application:

Listing of Claims:

Claims 1-26 (Cancelled)

Claim 27 (Previously Amended) A method for mediating transgenic intramolecular recombination selected from deletions of DNA sequences located between two six sites and inversions of DNA sequences located between two six sites, in in vitro mammalian cells, comprising the steps of transfecting the mammalian cells with prokaryotic beta recombinase derived from Streptococcus and transfecting the mammalian cells with DNA sequences containing six sites that allow recombination activity; wherein recombination occurs between two six sites.

Claim 28 (Previously Amended) A method for mediating transgenic intramolecular recombination selected from deletions of DNA sequences located between two six sites and inversions of DNA sequences located between two six sites, in in vitro mammalian cells, comprising the steps of transfecting the mammalian cells with prokaryotic beta recombinase derived from Streptococcus and integrating DNA sequences containing six sites that allow recombination activity into chromatin of the mammalian cells; wherein recombination occurs between two six sites.

Claims 29-32 (Cancelled)

Claim 33 (Previously Amended) A method according to claim 27, wherein two or more intramolecular recombination events involving different DNA sequences located between different *six* sites occur at the same time.

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Claim 34 (Cancelled)

Claim 35 (Previously Amended) A method according to claim 27, wherein an intramolecular deletion of DNA sequences located between directly oriented six sites is obtained.

Claim 36 (Previously Amended) A method according to claim 27, wherein an intramolecular inversion of DNA sequences located between inverted repeated six sites is obtained.

Claim 37 (Previously Amended) A method according to claim 27, wherein an intramolecular deletion of a DNA sequence located between two directly oriented *six* sites is obtained.

Claim 38 (Previously Amended) A method according to claim 27, wherein an intramolecular inversion of a DNA sequence located between two inversely oriented *six* sites is obtained.

Claim 39 (Currently Amended) A method according to claim 27, for mediating transgenic intramolecular recombination selected from deletions of DNA sequences located between two six sites and inversions of DNA sequences located between two six sites, in in vitro mammalian cells, comprising the steps of transfecting the mammalian cells with prokaryotic beta recombinase derived from Streptococcus and transfecting the mammalian cells with DNA sequences containing six sites that allow recombination activity; wherein an intramolecular deletion of a DNA sequence located between direct repeated DNA sequences containing six sites is obtained.

Claim 40 (Currently Amended) A method according to claim 27, for mediating transgenic intramolecular recombination selected from deletions of DNA sequences located between two six sites and inversions of DNA sequences located between two six sites, in in

vitro mammalian cells, comprising the steps of transfecting the mammalian cells with prokaryotic beta recombinase derived from Streptococcus and transfecting the mammalian cells with DNA sequences containing six sites that allow recombination activity; wherein an intramolecular inversion of a DNA sequence located between inverted repeated DNA sequences containing six sites is obtained.

Claim 41 (Previously Amended) A method according to claim 35, wherein the DNA sequences are located within an extrachromosomal DNA substrate.

Claim 42 (Previously Amended) A method according to claim 36, wherein the DNA sequences are located within an extrachromosomal DNA substrate.

Claim 43 (Previously Amended) A method for catalyzing site-specific resolution of DNA sequences located between *six* sites in an extrachromosomal substrate transfected into an *in vitro* mammalian cell, comprising the step of catalyzing the site-specific resolution with prokaryotic beta recombinase derived from *Streptococcus*; wherein recombination occurs between *six* sites.

Claim 44 (Previously Presented) A method according to claim 43, wherein the extrachromosomal substrate is a plasmid.

Claim 45 (Previously Presented)

Claim 46 (Previously Presented) A method according to claim 43, wherein the resolution is deletion.

Claim 47 (Previously Presented) A method according to claim 43, wherein the resolution is inversion.

Claims 48-49 (Cancelled)

Claim 50 (Previously Amended) A method according to claim 66, wherein the *six* sites are wrapped on a nucleosome at several locations.

Claims 51-52 (Cancelled)

Claim 53 (Previously Amended) A method for mediating transgenic intramolecular recombination in *in vitro* mammalian cells, comprising the steps of transfecting mammalian cells with prokaryotic beta recombinase derived from *Streptococcus* and transfecting the mammalian cells with DNA sequences containing *six* sites that allow recombination activity; wherein recombination occurs between *six* sites and in the presence of cell factors comprising HMG1 chromatin-associated protein.

Claim 54 (Cancelled)

Claim 55 (Previously Amended) A method for mediating transgenic intramolecular recombination in chromatin structures of mammalian cells, comprising the steps of transfecting *in vitro* mammalian cells with prokaryotic beta recombinase derived from *Streptococcus* and integrating DNA sequences containing *six* sites that allow recombination activity into chromatin of the mammalian cells; wherein recombination occurs between *six* sites and in the presence of cell factors comprising HMG1 chromatin-associated protein.

Claim 56 (Previously Amended) A method according to claim 28, wherein an intramolecular deletion of DNA sequences located between direct repeated six sites is obtained.

Claim 57 (Previously Amended) A method according to claim 28, wherein an intramolecular inversion of DNA sequences located between inverted repeated six sites is obtained.

Claims 58-61 (Cancelled)

Claim 62 (Previously Presented) A method according to claim 41, wherein the extrachromosomal DNA substrate is a plasmid.

Claim 63 (Previously Presented) A method according to claim 42, wherein the extrachromosomal DNA substrate is a plasmid.

Claim 64 (Previously Amended) A method for mediating transgenic intramolecular recombination selected from deletions of DNA sequences located between two six sites and inversions of DNA sequences located between two six sites, in mouse cells, comprising the steps of transfecting mouse cells with prokaryotic beta recombinase derived from Streptococcus and transfecting the mouse cells with DNA sequences containing six sites that allow recombination activity; wherein recombination occurs between two six sites.

Claim 65 (Previously Amended) A method for mediating transgenic intramolecular recombination selected from deletions of DNA sequences located between two six sites and inversions of DNA sequences located between two six sites, in mouse cells, comprising the steps of transfecting mouse cells with prokaryotic beta recombinase derived from Streptococcus and integrating DNA sequences containing six sites that allow recombination activity into chromatin of the mouse cells; wherein recombination occurs between two six sites.

Claim 66 (Previously Presented) A method for catalyzing site-specific resolution of DNA sequences located between *six* sites which are integrated into chromatin of an *in vitro* mammalian cell, comprising the step of catalyzing the site-specific resolution with prokaryotic beta recombinase derived from *Streptococcus*; wherein recombination occurs between two *six* sites.

Claim 67 (Cancelled)